

PATENT SPECIFICATION



Application Date : Sept. 23, 1924. No. 22,447 / 24.

233,961

Complete Accepted: May 21, 1925.

COMPLETE SPECIFICATION.

Improvements relating to Devices for Preventing the Escape of Oil from Journal and like Bearings.

A communication from abroad from SOCIÉTÉ D'EXPLOITATION DES BREVETS "HOLTORF" SOCIÉTÉ ANONYME, a company organised under the laws of Switzerland, of 15, Bahnhofsquai, Zurich, Switzerland.

I, HUBERT ALEXANDER GILL, M.A., Cantab., of 51/52, Chancery Lane, London, W.C. 2, England, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a device for preventing the escape of oil from bearings, particularly the journal bearings of railway vehicles, tramway vehicles and the like.

For the purpose of preventing the escape of oil from bearings it has been suggested previously to provide the shaft with a groove into which was fitted a channel shaped ring, made in sections, adapted to rotate with the shaft inside a casing but spaced at some distance from the walls thereof so that any oil which was projected outside the ring could creep to the outside of the casing. Suggestions have also been made to provide the shaft with a ring of square section, angle-iron or T-iron section, sufficient space being left between the ring, when of square section, and the walls of a correspondingly shaped groove into which it fits to permit of the passage of oil. Further it has been suggested to fit a plate of metal around the shaft for this purpose. In connection with ball bearings suggestions have been made to provide a disc on a rotating member for co-operation with a disc on a fixed member, these discs having a very slight clearance one against the other so as to prevent the passage of lubricant between them.

[Price 1/-]

According to the present invention one or more grooves are formed in a rotating ring disposed between the walls of the bearing casing or between packing shields provided in the bearing casing, the outer walls of the grooves being spaced at such a distance from the walls of the bearing casing or from the packing shields that the narrow space will be bridged by the oil which collects at the periphery of the walls of the grooves due to centrifugal action so as to form a gutter which conducts any additional oil over the inner surface of the bearing casing or packing shields into an oil container.

Two examples of construction of the invention are shown in the accompanying drawing.

Figures 1 and 3 show respectively a longitudinal section and a section on the line A B of one form of construction with one oil groove.

Figure 2 shows a longitudinal section of a form of construction with two oil grooves.

To the shaft *a* is secured a ring *b* which is provided at its periphery with an oil groove *g* limited by side walls *c* and *d* (Fig. 1).

In the form of construction shown in Figure 2 two oil grooves *g* are provided which are limited by the walls *i*, *k* and *l*.

In the bearing casing *m* of the journal box *n* are inserted packing shields *o* which serve for guiding the discs or the ring *b*. The outer walls of the shields are pressed against the wall of the bearing casing by means of a number of springs *p*. It will however be understood that the packing shields *o* may be omitted in which case the end walls of the grooves are so spaced as to co-operate with the bearing casing.

The ring *b* may be secured to the shaft or it may be split in the manner of a

piston ring and resiliently held on the shaft so that the ring rotates with the shaft while the latter can move therein.

- As soon as the shaft comes to rest the
 5 oil at the edges *e* and *f* or *r*, *s* and *t*
 respectively flows down the inner sides
 of the walls *c* and *d* or *i*, *k* and *l* respec-
 tively into the grooves *g* and from here
 back into the axle box. When the shaft
 10 is in motion, the oil is prevented from
 being ejected outwardly beyond the edges
e and *f* or *r* and *t* as the oil which collects
 at the edges bridges the narrow spaces
 between the ring and the packing shields.
 15 The oil then flows around the bridge of
 oil on the inner surface of the packing
 shields into the collecting chamber. In
 the wall of the bearing casing there is
 provided an opening *q* so that the oil
 20 collecting in the bottom of the bearing
 casing can flow back into the journal box.

- Having now particularly described and
 ascertained the nature of my said inven-
 tion and in what manner the same is
 25 to be performed, I declare that what I
 claim is:—

1. A device for preventing the outflow
 of oil from bearings, particularly applic-

able to journal bearings for railway
 vehicles and the like, wherein one or 30
 more grooves are formed in a rotating
 ring disposed between the walls of the
 bearing casing or between packing
 shields provided in the bearing casing,
 the outer walls of the grooves being 35
 spaced at such a distance from the walls
 of the bearing casing or from the packing
 shields that the narrow space will be
 bridged by the oil which collects at the
 periphery of the walls of the grooves due 40
 to centrifugal action so as to form a
 gutter which conducts any additional oil
 over the inner surface of the bearing
 casing or packing shields into an oil
 container. 45.

2. A device for preventing the escape
 of oil from journal and like bearings con-
 structed and arranged substantially as
 described with reference to the various
 figures of the accompanying drawings. 50

Dated this 23rd day of September, 1924.

For the Applicant,
 H. A. GILL & Co.,
 Chartered Patent Agents,
 51/52, Chancery Lane, London, W.C. 2. 55

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1

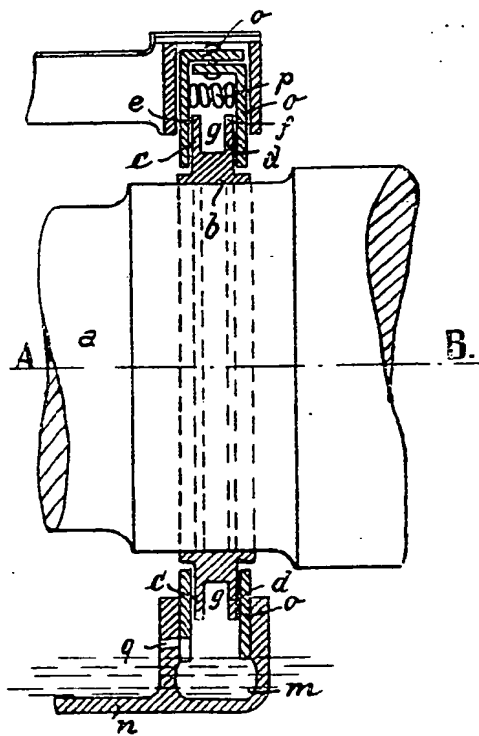


Fig. 2

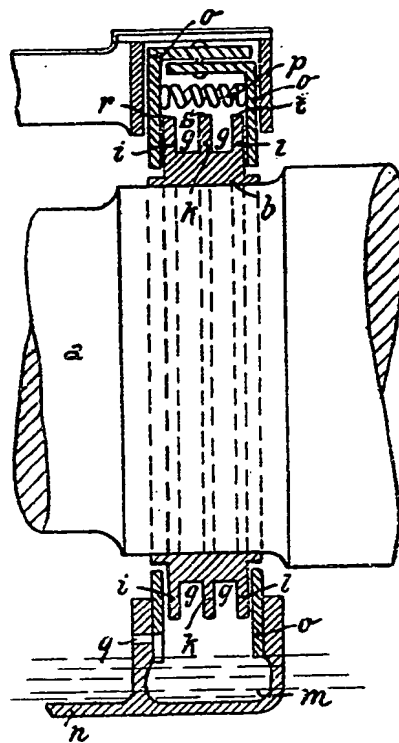


Fig. 3

